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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,526	10/31/2003	Shigetsune Torin	10030907-1	4232

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AGILENT TECHNOLOGIES, INC.  
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EXAMINER

CHARJOUT, MOHAMED

ART UNIT PAPER NUMBER

2857

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/699,526

**Applicant(s)**

TORIN ET AL.

**Examiner**

Mohamed Charioui

**Art Unit**

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/31/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on-sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 10, 11 and 17-19** are rejected under 35 U.S.C. 102(b) as being anticipated by Dildine (U.S. 5,416,422).

**As per claims 10, 11 and 17**, Dildine teaches frequency translating the applied signal by a set of equally spaced frequencies to form a corresponding set of intermediate frequency signals (see col. 1, lines 15-20; col. 2, lines 30-50; and col. 11, lines 51-64); measuring the noise in at least two measurement bands of each of the intermediate frequency signals that are separated by the frequency spacing of the equally spaced frequencies (see col. 2, lines 30-46); and determining the noise power in the frequency band of the applied signal based on the noise measured (see col. 2, lines 46-50).

**As per claims 18 and 19**, Dildine further teaches solving a matrix equation resulting from the noise measured in the at least two measurement bands of each of the intermediate frequency signals by the sampler, and applying the least squares method (see col. 2, lines 30-50).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Heikkilaet et al. (U.S. 5,638,034).

Dildine teaches the system as stated above except for sampling each of the intermediate frequency signals.

Heikkilaet et al. teach this feature (see col. 2, lines 41-48). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Heikkilaet et al.'s teaching into Dildine's invention, because more accurate determination of the noise power would be determined and undesired signals would be eliminated.

3. **Claims 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Heikkilaet et al. (U.S. 5,638,034).

Dildine teaches the system as stated above except for filtering each of the intermediate frequency signals prior to sampling each of the intermediate frequency signals.

Heikkilaet et al. teach this feature (see col. 6, lines 52-64 and col. 10, lines 50-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Heikkilaet et al.'s teaching into Dildine's teaching

because unwanted fluctuations in the signals would be filtered out and accurate measurement of the noise power in the frequency band would be performed.

4. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Suominen et al. (U.S. 5,926,513).

Dildine teach the system as stated above except for digitally filtering samples acquired from the sampling.

Suominen et al. teach this feature (see col. 2, lines 10-37). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Suominen et al. teaching into Dildine's teaching because digitally filtering samples would improve frequency response and accurate noise measurements would be performed.

5. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Richard James Dewey (GB 2234874 A).

Dildine teaches the system as stated above except that the at least two measurement bands of each of the intermediate frequency signals include an upper sideband and a lower sideband that are overlapping.

Richard James Dewey teaches this feature (see page 4, lines 22-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Richard James Dewey's teaching into Dildine's because the upper sideband and the lower sideband of the measurement bands of each of the intermediate frequency signals would overlap. Therefore, noise power in the frequency band would be accurately measured.

6. **Claims 1-3, 6 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Nagasaka (U.S. 2004/0039540).

**As per claims 1-3 and 8**, Dildine teaches a frequency converter (i.e. oscillator and mixer) frequency translating the applied signal by a set of equally spaced frequencies to provide a corresponding set of intermediate frequency signals (see col. 1, lines 15-20; col. 2, lines 30-50; and col. 11, lines 51-64); measuring the noise in at least two measurement bands of each of the intermediate frequency signals that are separated by the frequency spacing of the equally spaced frequencies (see col. 2, lines 30-46); and a signal processor determining the noise power in the frequency band of the applied signal based on the measured noise (see col. 2, lines 46-50).

Dildine fails to teach that the noise is measured by a sampler.

Nagasaka teaches this feature (see paragraph [0011]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Nagasaka's teaching into Dildine's invention because a sampler would measure the noise of the intermediate frequency signals. Therefore, accurate measurements of the noise of the intermediate frequency signals would be performed and appropriate correction actions to remove the noise power from the frequency band would be taken.

**As per claim 6**, Dildine further teaches solving a matrix equation resulting from the noise measured in the at least two measurement bands of each of the intermediate frequency signals by the sampler, and applying the least squares method (see col. 2, lines 30-50).

7. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Nagasaka and Heikkilaet et al. (U.S. 5,638,034).

Dildine in view of Nagasaka teach the system as stated above except for filtering each of the intermediate frequency signals prior to sampling each of the intermediate frequency signals.

Heikkilaet et al. teach this feature (see col. 6, lines 52-64 and col. 10, lines 50-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Heikkilaet et al.'s teaching into Dildine in view of Nagasaka's teaching because it would filter each of the intermediate frequency signals prior to sampling each of the intermediate frequency signals. Therefore, unwanted fluctuations in the signals would be filtered out and accurate measurement of the noise power in the frequency band would be performed.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Nagasaka and Suominen et al. (U.S. 5,926,513).

Dildine in view of Nagasaka teach the system as stated above except for digitally filtering samples acquired from the sampling.

Suominen et al. teach this feature (see col. 2, lines 10-37). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Suominen et al. teaching into Dildine in view of Nagasaka's teaching because it would digitally filter samples acquired from the sampling. Therefore, frequency response would be improved and accurate noise measurements would be performed.

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9. **Claims 7 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dildine in view of Nagasaka and Richard James Dewey (GB 2234874 A).

Dildine in view of Nagasaka teach the system as stated above except that the at least two measurement bands of each of the intermediate frequency signals include an upper sideband and a lower sideband that are overlapping.

Richard James Dewey teaches this feature (see page 4, lines 22-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Richard James Dewey's teaching into Dildine in view of Nagasaka's because the upper sideband and the lower sideband of the measurement bands of each of the intermediate frequency signals would overlap. Therefore, noise power in the frequency band would be accurately measured.

#### **Prior art**

10. The prior art made record and not relied upon is considered pertinent to applicant's disclosure:

**Leake et al. ['218]** disclose method of compensating for frequency errors in noise power meters.

**Gourgue ['536]** discloses digital super heterodyne receiver and baseband filter method used therein.

**Chen ['857]** discloses multiplexer using ceramic filter as stacked satellite down converter.

#### **Contact information**



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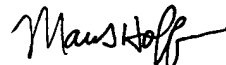
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohamed Charioui whose telephone number is (571) 272-2213. The examiner can normally be reached Monday through Friday, from 9 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mohamed Charioui

3/11/05



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